# **APPENDIX A**

Leeville Project Mitigation Plan

# NEWMONT MINING CORPORATION'S LEEVILLE PROJECT MITIGATION PLAN

## Introduction

In the Draft Environmental Impact Statement for Newmont Gold Company's Leeville Project, the Bureau of Land Management (BLM) provided detailed analysis of the potential impacts associated with implementation of Newmont's proposed Plan of Operations. The BLM also developed for public review and comment a general array of possible mitigation and monitoring measures for each potentially affected resource.

This Mitigation Plan provides the next step in the process set forth by the National Environmental Policy Act (NEPA) by defining a detailed, specific mitigation plan that Newmont commits to undertake upon issuance of the Record of Decision. The Leeville Project Mitigation Plan is a project specific extension of the South Operations Area Project (SOAP) Mitigation Plan (1993) as amended by the South Operations Area Project Amendment (SOAPA) Mitigation Plan (2002) in addressing dewatering and dewatering related impacts.

# **Geology and Minerals**

#### A. SUMMARY OF POTENTIAL IMPACTS

# Waste Rock Disposal Facility

Static geochemical acid-base accounting test results indicate that a small percentage of ore and waste rock is potentially acid generating. Meteoric Water Mobility Procedure tests indicate that waste rock has the potential of leaching antimony, arsenic, manganese, nickel, selenium, and sulfate.

## **Sinkholes**

There is a small potential that sink holes could develop due to the added dewatering at the Leeville Mine within the existing Carlin Trend cone of depression.

# B. GEOLOGY AND MINERALS MITIGATION PROGRAM

# Waste Rock Disposal Facility

The waste rock dump disposal facility will be constructed in accordance with Newmont's 1995 *Refractory Ore Stockpile and Waste Rock Dump Design, Construction, and Monitoring Guidelines,* modified to include performance standards and detailed construction specifications. Minimum standards to be followed are described below but modifications to the design to incorporate more stringent standards are acceptable. The base will be constructed to a thickness of 1 foot and will have an hydraulic conductivity

of  $1x10^{-5}$  cm/sec or less. The base will be sloped to allow for free draining of fluids. Drainage collection ditches will be constructed so that the hydraulic conductivity is  $1 \times 10^{-6}$  cm/sec or less and collection ponds will be constructed so that the hydraulic conductivity is 1x10<sup>-7</sup> cm/sec or less. Potentially acid generating material will be isolated as discrete cells within the waste rock dump and will be encapsulated on top, bottom and sides with waste rock that has an ANP:AGP ratio of at least 3:1. The thickness of the encapsulating layers will be a minimum of 10 feet. Actual thickness will be based on the neutralizing capacity of the encapsulating layer and calculated so that if acid were produced it would be neutralized. Any precipitation falling within the base perimeter would flow to the lowest elevation area on the low permeability base. Solution would then be captured in a collection pond(s) for sampling and sediment control. A low permeability cap will be constructed on top of the encapsulation layer over the final lift of the PAG cell. Details of the low permeability cap will be determined after mathematical modeling of the dump has been done and will be submitted as part of the closure plan. NDEP will review and permit the construction specifications, material specifications, and performance criteria for the waste rock disposal facility to ensure that waters of the State of Nevada are not degraded by potential acid rock drainage. NDEP may impose more stringent restrictions. In addition to any design specifications and closure requirements that NDEP may impose, Newmont will ensure that the waste rock disposal facility is capped with a minimum of 24 inches of growth medium and sloped to promote run off of water (free draining), prevent ponding or impounding of water, and prevent erosion. The 24 inches of growth medium may or may not be a part of the low permeability cap which will be added at closure.

Newmont will develop a closure plan, which will be based on appropriate modeling data, for the Waste Rock Disposal Facility. This plan will cover the monitoring provisions and time frames required to detect possible water seepage and mitigation measures should sampling prove that the water is turning acid or sampling and modeling suggest that the water may turn acid in the future. Based on meteoric water mobility tests described in the EIS, water collected in the collection pond, if any, will be tested at a minimum for: pH, antimony, arsenic, cadmium, manganese, nickel, selenium, thallium, sulfate, and total dissolved solids. Should the water exceed maximum contaminant levels, it will be handled according to regulation. Long-term trust funds as described in 43 CFR 3809.552(c) will be established at the time the closure plan is completed, if warranted. Until the long-term closure plan is completed, the Waste Rock Disposal Facility monitoring will be bonded under the reclamation bond for 30 years post mining (2050). The reclamation bond will be reviewed every three years and updated as necessary. Bond amount for this monitoring is currently estimated to be \$126,000 but will be finalized in the Record of Decision.

#### Sinkholes

In the event a sinkhole should develop as a result of dewatering activities at the Leeville Project, Newmont shall, within one week of the discovery of the sinkhole, initiate consultation with BLM with regard to the repair of the sinkhole. Newmont shall

undertake repair, which could include but is not limited to backfilling, recontouring, and seeding of the sinkhole as soon as practicable.

# Water Quantity and Quality

#### A. SUMMARY OF POTENTIAL IMPACTS

Leeville dewatering would add to regional groundwater drawdown currently created by dewatering at Barrick's Goldstrike Property and the Gold Quarry Mine. A total of about 360,000 acre-feet of water would be removed by Leeville dewatering during the life-of-mine. Dewatering at Leeville would deepen the cone of depression in the vicinity of Leeville (see Figure 4-2) and would extend the period of recovery of the ground water table by 20 years in an area of the Carlin Trend that has already been affected by dewatering at other mines. This would affect recovery of water levels in potentially impacted water wells and recovery time of reduced flow in potentially impacted streams and 40 potentially impacted springs/seeps. On a cumulative basis, reductions in baseflow resulting from Leeville dewatering are predicted to be 0.1 cfs or less for each of the potentially affected streams (as predicted by HCI model: Maggie, Boulder, Beaver, and Mary's creeks) and the Humboldt River.

Groundwater rights for three stock-watering wells and two mining/milling wells could be impacted by additional drawdown from Leeville dewatering and would lengthen the recovery period by up to 20 years. Several surface water rights are located within the Leeville drawdown area. Leeville dewatering would lengthen the recovery period to surface water by up to 20 years.

# B. WATER QUANTITY AND QUALITY MITIGATION PROGRAM

Newmont and Barrick both maintain an extensive network of groundwater monitoring wells and surface water monitoring sites. Newmont reports results of monitoring to the BLM quarterly (The 2002 SOAPA Mitigation Plan changes the requirement to twice annually) in the *Maggie Creek Basin Monitoring Plan*. Monthly piezometer hydrographs will continue to be supplied to BLM. Leeville piezometers and surface water monitoring sites are already part of Newmont's South Operations Area Project monitoring network or will be added to the network. The Leeville network monitoring results will be reported to the BLM twice annually in a clearly marked section of the Maggie Creek Basin Monitoring Plan.

Since Leeville dewatering deepens the existing drawdown cone in the vicinity of the Leeville Mine and prolongs the recovery time of the water table by 20 years, mitigation is linked closely with the mitigation for SOAP/SOAPA. In those locations where the HCI model reports show that Leeville will prolong the recovery period by 20 years, Newmont's SOAP/SOAPA mitigation obligations are extended by 20 years. The 20 year mitigation obligation period may be updated as the Carlin Trend Groundwater Model is recalibrated. In other locations, Leeville dewatering is more closely linked with Barrick's Betze Project mine dewatering due to longer recovery periods. Monitoring for Leeville

ground water recovery will correspond to the 100 year post mining maximum extent of the drawdown cone, as is the monitoring scheduled for Betze.

# **Groundwater Monitoring Plan**

During the life of the mine, Newmont will provide the BLM with a groundwater monitoring report twice annually; one report will cover October through March and the second will cover April through September. Leeville Project data will be incorporated into the Maggie Creek Basin Monitoring Plan and clearly identified. Monthly piezometer hydrographs will continue to be supplied to BLM. Comprehensive electronic water level files will be provided to the BLM with the monitoring reports, and at any time requested by the BLM. Recalibration of the MINEDW (Carlin Trend) groundwater model will be completed every two years. The recalibration requirement will terminate upon cessation of Newmont's dewatering activities at SOAPA and the Leeville Project.

Long-term ground and surface water monitoring associated with water level recovery from the dewatering program at the Leeville Project will be conducted to assure that mitigation measures described in the Leeville Mitigation Plan would be carried out, if necessary. BLM will also have the option of field checking network piezometers at any time deemed necessary.

### Long Term Monitoring Plan for Leeville

Long term monitoring will be initiated when active dewatering ceases at the end of mining at Leeville. During the first two years of this plan, groundwater elevation monitoring shall be conducted on a quarterly basis. The piezometers included within this plan are shown on Figure 1, Groundwater and Surface Water Monitoring Locations. Surface flow monitoring shall be conducted quarterly; the locations of these sites are also shown on Figure 1. The data collected by this monitoring program will be compiled into an annual report and submitted to BLM. All monitoring data shall also be supplied to BLM whenever requested. Submitted data would be in written or electronic format or both.

At the conclusion of the first two years of monitoring, the monitoring program will be reduced by 50%. BLM will review the data to determine which monitoring sites will be retained. The reduced network will be monitored quarterly for an additional eight years. Annual reports will be prepared and submitted to BLM. Monitoring data shall also be supplied to BLM whenever requested.

After the initial ten years of monitoring, the monitoring network will again be reduced. Figure 2, Long Term Monitoring Network, shows the extent of this network. In addition to the locations shown on Figure 2, BLM will choose five additional piezometers from the remaining groundwater water elevation monitoring network to retain in the final monitoring network. It is estimated that 90% recovery in lower plate rocks at Leeville will occur in the year 2185, other locations may have longer or shorter recovery times.

Monitoring and the need for potential mitigation will continue for 100 years post mining (2120) which is estimated to be the maximum extent of the drawndown cone. Length of time required for monitoring and mitigation will be reviewed during updates of the model and could be revised as the model is refined with additional data. All monitoring data shall be supplied to BLM whenever requested, in addition to the annual reports.

# Additional Monitoring

If HDP-12 or JKC-1 should decline by 20 feet in any given year, or by a total decline of 50 feet, Newmont will drill and construct a piezometer in the vicinity of Beaver Creek to monitor for possible groundwater elevation changes. The location will be selected in consultation with the BLM and will become part of the Newmont monitoring network to be monitored and reported under the Maggie Creek Basin Monitor Report format. A decline of the water level in HDP-12 or JKC-1 by 20 feet in any given year, or by a total decline of 50 feet will also trigger the initiation of surface water monitoring of the baseline springs in Beaver Creek and flow in Spring Creek.

# Surface Water Monitoring Plan

Newmont will, for a period of five Falls (2002 through 2006), monitor up to four springs once each Fall, between September 21 and December 21, in the Beaver Creek area. This monitoring is intended to develop baseline data that can be used in conjunction with groundwater elevation change data to determine, in the future, if impacts caused by cumulative effects from mine dewatering have impacted the Beaver Creek area. The springs to be monitored are located in sections 19 and 30, T. 37 N., R. 52 E., section 24, T. 37 N., R. 51 E., and section 3, T. 36 N., R. 52 E. near the confluence of Beaver Creek with Maggie Creek. These springs may provide refugium for Lahontan Cutthroat Trout during base flow conditions. A field inspection in the Fall of 2002 with BLM and Newmont personnel will locate the exact monitoring locations for each spring and determine if they have perennial flow. Data collected will include photographs, flow rate, specific conductance, pH and dissolved oxygen. This requirement is subject to permission being granted by the private land owner(s) for access to the springs.

A surface flow monitoring station will be established on the perennial reach of Sheep Creek located in approximately the NE ¼ of Section 21, T. 35 N, and R. 50 E. The data from this new monitoring station will be incorporated into the Maggie Creek Basin Monitoring Plan network. BLM and Newmont personnel will determine the exact location of the monitoring station during a field inspection during the Fall of 2002.

Within one year of the record of decision, Newmont will evaluate existing data for springs near the Leeville Project and report to the BLM on the potential of springs near the Project to be affected by Leeville dewatering. BLM will determine if these springs need to be added to the existing survey(s). If necessary, new data (including tritium) will be collected by Newmont to aid in this determination.

Monitoring of select stream and spring monitoring sites specific to the Leeville Project will be continued until 2120, 100 years post mining. Stream monitoring will be continued at the Coyote-0, LJack-0, Jack-0, and Jack sites. Spring monitoring will be continued at springs 76 and 78. As discussed above, if monitoring of peizometers HDP-12 or JKC-1 show a decline by 20 feet in one year or a total decline of 50 feet, then additional surface flow monitoring will be initiated. This additional surface monitoring will incorporate monitoring the flow in Spring Creek, and the Beaver baseline springs.

A population of spring snails occurs in Warm Spring (40), outside the cumulative effects area. Should the groundwater level in monitoring well PAL-1 fall more than 10 feet from its October 1993 level or if the recalibration of MINEDW model shows a potential impact to this area, Newmont will initiate within fourteen days, consultation with the BLM concerning appropriate further studies and/or mitigation, and Warm Spring (40) will be added to the surface monitoring network.

Spring flow monitoring will be conducted annually, in the fall (9/21 to 12/21). The locations of these sites are also shown on Figure 2. Stream flow data will be collected quarterly. If during the course of dewatering other monitoring sites are added as required by BLM to the Maggie Creek Basin Monitoring Plan network some of these sites may be added to the long term monitoring network and be included in the Gold Quarry Spring Survey Fall Report.

The Leeville project adds up to 20 years to the recovery time of the dewatering impacts within the cumulative cone of depression for dewatering on the Carlin Trend. As monitoring is scaled down at Gold Quarry, if it becomes apparent that certain sites are critical for continued monitoring they may be incorporated into the Leeville monitoring network.

# **Groundwater and Surface Water Mitigation**

Newmont will bond for long term water monitoring. In the eventuality that Newmont is unable to continue ground and surface water monitoring this bond will be secured within 6 months of the signing of the Record of Decision and will cover the long term ground water and surface water monitoring described above. The bond amount is currently estimated to be \$875,700, but the amount will be finalized and published in the Record of Decision.

If any existing water rights for livestock are impacted, Newmont will enter into arrangements with existing area ranchers or the BLM in the case of public land, to replace any stockwater loss caused by mine dewatering. Newmont will use its existing underground water rights (or obtain additional well permits) to provide such replacement water.

If any existing water rights for uses other than stockwater are impacted, Newmont will enter into arrangements with the affected party or the BLM in the case of public land, to replace any water loss caused by mine dewatering. Newmont will use its existing

underground water rights (or obtain additional well permits) to provide such replacement water.

# Seep and Spring Mitigation

Mitigation of lost flows at seeps and springs will be accomplished by two basic mechanisms: replacement of flow or provision of substitute water sources at nearby locations. Where impacted seeps or springs support sizable riparian areas or provide flow to adjacent creeks, replacement of flow will be implemented through the use of groundwater wells drilled at or near the affected spring. Flow replacement will be done such that the primary function of unimpacted spring and seep flow is maintained. Where impacted seeps and springs do not serve those functions, but are important sources of water for terrestrial wildlife, substitute water sources will be provided through the use of guzzlers. In areas where seeps and springs are in close proximity to one another, a single well or guzzler may be utilized to mitigate several impacted water sources.

Mitigation measures will be initiated within sixty days after BLM has determined that mitigation is necessary. The type of mitigation (as described above) best suited to an individual seep or spring will be determined in consultation with the BLM. Cooperation with private landowners and BLM lessees may be required for certain seeps and springs. Where guzzlers are utilized, Newmont will maintain or replace the guzzlers as required.

Within the Leeville cone of depression (Figure 4-2) in those instances where augmentation is initiated by Newmont for SOAPA or by Barrick for Betze, Newmont will assume augmentation responsibility for an additional 20 years, or as determined by recalibration of the model.

Newmont will use its existing groundwater rights, or obtain additional well permits to implement these mitigation measures. Newmont will transfer 50 percent of any water rights used to mitigate seeps and springs located on public land to the BLM.

#### Stream and River Mitigation

Within the Leeville cone of depression (Figure 4-2) or where the HCI model predicts that the cumulative addition of Leeville dewatering will decrease the baseflow by 0.1cfs (Maggie, Boulder, and Marys creeks, and the Humboldt River) if augmentation is initiated by Newmont for SOAPA or by Barrick for Betze, Newmont will assume augmentation responsibility for an additional 20 years, or as determined by recalibration of the model.

Beaver Creek: If in the future, Newmont is required to drill and construct a piezometer in the vicinity of Beaver Creek this piezometer will become the trigger well for potential mitigation for Beaver Creek. The trigger for mitigation will depend on how many years of water level data exist for the well. Presumably this piezometer would be constructed years in advance of any potential water level changes in the Beaver Creek area caused by cumulative dewatering effects. Data collected prior to any potential impact will

document seasonal and longer-term variations in the water table. Once 10 years of data exist, the trigger elevation for potential mitigation will be based on average yearly groundwater elevation change and any elevation changes caused by drought and wet year cycles. If potential effects to Beaver Creek are detected prior to having 10 years of water level data, mitigation will be triggered when the water level in this well falls to less than one foot above the elevation of the bed of Beaver Creek (measured at the point nearest the well). If trigger conditions are measured in the Beaver Creek piezometer, Newmont will, within 14 days of recording the water level data, initiate consultation with the BLM regarding potential mitigation. Consultation will include the U.S. Fish and Wildlife Service. At that time it will be determined whether it is appropriate to augment, to develop offsite mitigation, or if any action is required at all. Any decisions regarding mitigation at Beaver Creek must consider monitoring data collected at the Beaver baseline springs and Spring Creek.

Humboldt River: If augmentation is triggered, as described above for SOAPA, then Newmont will mitigate potential impacts to irrigation-season flows and water rights holders on the upper and lower Humboldt River by foregoing the use of certain senior irrigation rights controlled by Newmont or the TS Ranch.

# Surface Water Quality Monitoring & Mitigation

Newmont samples Rodeo Creek quarterly, if water is present, as part of their Water Pollution Control Permit. Newmont will provide this data to BLM on a yearly basis. If data shows that arsenic or other contaminants are increasing due to mine disturbance then Newmont will coordinate with BLM and the State of Nevada to correct the problem.

#### Terrestrial Wildlife

#### A. SUMMARY OF POTENTIAL IMPACTS

Interim loss of 486 acres, less 118 acres with implementation of Alternative C, of primarily sagebrush habitat would impact terrestrial wildlife. After reclamation approximately one half acre would be left unseeded. 5,700 feet of open canal would cross through crucial summer range for pronghorn antelope. The open canal could cause disruption to pronghorn antelope movements and drowning of animals, including mammals, birds, and reptiles. Other direct impacts of the proposed action include collisions by birds with powerlines, collisions with vehicles, and drowning in the proposed canal.

Newmont would construct a reinforced concrete mine water sump which could contain hydrocarbon contaminated water. The hydrocarbon contaminated water has the potential to attract migratory shorebirds and waterfowl and could cause injury or death to these species.

#### B. TERRESTRIAL WILDLIFE MITIGATION PROGRAM

Alternative A, Eliminate Canal Portion of Water Discharge Pipeline System, will eliminate the 5,700 feet of open canal and eliminate the need for additional mitigation for the potential disruption of pronghorn antelope movements and drowning of small mammals and reptiles in the open canal.

Newmont will comply with the Migratory Bird Treaty Act by minimizing stripping operations during the breeding season (3/15-7/15) of ground nesting migratory birds using the area. If stripping is proposed during the breeding season, nest surveys will be conducted prior to disturbance and buffer zones will be established to protect identified active nests.

The mine water sump will be monitored daily for bird mortalities. Bird mortalities will be reported to Nevada Division of Wildlife. If bird mortalities occur, measures will be taken to prevent birds from coming in contact with the hydrocarbon contaminated water.

Only the cliff areas in the vicinity of the production shaft and support facilities will be left unseeded. This represents approximately one half acre. In 1996 Newmont, Elko Land and Livestock, NDOW, and BLM developed and implemented the Bob's Flat Emergency Fire Rehabilitation and Mule Deer Mitigation Project. As part of this Mule Deer Mitigation project, approximately 3,427 acres were seeded on public lands, and as stated in the agreement these acres were placed in a mule deer habitat mitigation bank for Newmont. Seven Newmont projects have withdrawn acreage from this mitigation bank: South Operations Area Project (800 acres), Bootstrap Project (300 acres), Section 36 Project (211 acres), Lantern Project (75 acres), South Operations Area Project Amendment (139 acres), Leeville Project (1 acre), and Pete Project (264 acres). The mule deer mitigation bank contains an available 1,637 acres for future projects.

# Threatened, Endangered, Candidate, and other Special Status Species

#### A. SUMMARY OF POTENTIAL IMPACTS

Direct impacts to threatened, endangered, candidate, and sensitive species or their habitat include incremental loss of habitat (including prey base) due to mine disturbance. Species with habitat potentially affected by the Project include goshawk, burrowing owl, sage grouse, Swainson's hawk, Preble's shrew, golden eagle, ferruginous hawk, and several species of bat (foraging and roosting habitat).

Base flow reductions in Maggie, Mary's, Beaver, and Boulder creeks and the Humboldt River caused by adding Leeville dewatering to other dewatering operations in the Carlin Trend at any given time would be 0.1 cfs or less. Portions of three streams which support LCT, upper Coyote Creek, upper Little Jack Creek, and a mid section of Beaver Creek, are within the predicted cumulative cone of depression in the Carlin Trend. Other stream segments and springs within or close to the cumulative effects drawdown area support springsnails, Columbia spotted frog, and California floaters.

# B. THREATENED, ENDANGERED AND CANDIDATE SPECIES MITIGATION PROGRAM

## **Lahontan Cutthroat Trout**

Continue with Maggie Creek Watershed Restoration Project, as described in the 1993 Mitigation plan for SOAP and as modified in the Final SOAPA EIS since this project has shown excellent results.

If it is determined during the 2002/2003 evaluation that existing culverts are inhibiting fish passage on Little Jack and Coyote creeks, Newmont will replace culverts on Little Jack and Coyote creeks with structures suitable for fish passage by 2004 depending on completion of the permitting process. These culverts will be evaluated for fish passage in 2002 as part of the mitigation for the South Operations Area Project Amendment (SOAPA). Any necessary design work for replacement of these structures will also be completed under SOAPA by 2003 depending on completion of the permitting process. Replacement of impassible culverts with structures suitable for fish passage will facilitate the overall strategy of establishing an LCT metapopulation within the Maggie Creek subbasin.

Newmont will support the Trout Unlimited project titled *Genetics and Movement of Salmonids in Response to Reconnected Populations- Maggie Creek, Nevada*: funded in part by the National Fish and Wildlife Foundation's Strategies for Large Scale Watershed Restoration of Cutthroat Trout program. Newmont will provide access to Newmont controlled lands and will document funds expended by Newmont for enhancement and mitigation within Maggie Creek Basin. This documentation will be provided to the National Fish and Wildlife Foundation to support Trout Unlimited application for matching funds to the National Fish and Wildlife Foundation. The primary goals of the Trout Unlimited plan for Maggie Creek Basin are:

- To document LCT connectivity among the tributaries and main stem for the Maggie Creek drainage (i.e., does Maggie Creek support isolated tributary and main stem populations with only a few fluvial LCT, or is there a high degree of connectivity with significant numbers of fluvial LCT?).
- To document LCT use of Beaver Creek in response to culvert/barrier replacement (i.e., will LCT move into Beaver Creek from the main stem of Maggie Creek to locate spawning sites or supplement its small resident population?)

This project began in 2001 and is anticipated to continue for an additional 4 to 5 years, to be completed by 2005 or 2006 depending on success of various sampling methods. Future work along with associated cost projections is shown in Table 1.

Table 1. Work Schedule and Cost Projections for Trout Unlimited Study Titled "Genetics and Movement of Salmonids in Response to Reconnected Populations - Maggie Creek, Nevada".

Task	Year	<b>Annual Cost</b>	Total/Year (\$)
		Projection (\$)	
General Reconnaisance	2001	31,000	31,000
Weir Trapping	2002	35,000	
Population Survey	2002	5,000	40,000
Weir Trapping	2003	20,000	
Radio Tracking	2003	45,000	
Population Survey	2003	5,000	70,000
Weir Trapping	2004	20,000	
Radio Tracking	2004	30,000	
Population Survey	2004	5,000	55,000
Radio Tracking	2005	30,000	
Population Survey	2005	5,000	
Genetics	2005	30,000	65,000

<sup>\*</sup>Newmont documented \$63,000 in qualifying expenditures for habitat and hydrologic monitoring in the Maggie Creek basin for 2001.

## Sage Grouse

Predatory bird perch deterrents will be installed on all power lines to be built as a result of the Leeville Project. This action will mitigate the effects of potential predatory bird perch areas within sage grouse habitat. Perch deterrent designs will be completed through consultation with BLM and NDOW biologists.

# Bald Eagle

To minimize potential bald eagle mortality as a result of bald eagles feeding on wildlife mortalities on roads, prompt removal of mule deer and other wildlife mortalities on haul roads is necessary. Newmont will comply with their *Wildlife Mortality Reporting and Handling Procedures* which requires prompt reporting and removal of dead wildlife. Prompt reporting and removal of wildlife mortalities assures that bald eagles will not be attracted to haul roads where they would be at risk of vehicular collision.

# Wetlands/Riparian Zones

#### A. SUMMARY OF POTENTIAL IMPACTS

Dewatering activities at the proposed Leeville Project would result in up to a 20 year longer period of recovery for up to 70 acres of riparian vegetation potentially affected by Leeville dewatering.

#### B. WETLANDS/RIPARIAN ZONES

Mitigation and monitoring for wetlands and riparian zones is covered in the South Operations Area Project Mitigation Plan (1993) as amended by the South Operations

Area Project Amendment Mitigation Plan (2002). Projects initiated under these mitigation plans are incorporated into and continued under the Leeville Project Mitigation Plan. Some of the projects incorporated by tiering include:

- 1. The Maggie Creek Watershed Restoration Project, includes:
  - A. Water Development and Fencing to Enhance Riparian Areas.
  - B. Vegetation Management Plan (includes: Riparian Exclusion Zones, Riparian Restoration Zones, and Controlled Grazing Zones)
  - C. Conservation Easement, discussed below.
- 2. The Susie Creek Riparian Enhancement Project.
  - A. Installation of fences to exclude livestock along portions of the creek.
- 3. The Marys River Riparian Project
  - A. Drill stock watering wells
- 4. A Seep and Spring Enhancement and Flow Augmentation Program
  - A. Flow augmentation of seeps and springs by drilling a well to supplement water or by providing guzzlers.
  - B. Fence springs and seeps to exclude livestock

#### Conservation Easement

As a result of the dewatering effects from the Leeville Project, the "Term of Easement" page 3, section 1.6 of the Newmont Maggie Creek Conservation Easement (BLM file #N-62094; # 175560, Book 338, pages 476-496 recorded with the Eureka County Recorders Office) will be extended for 78 years.

Section 1.6, Term of Easement of the Newmont Maggie Creek Conservation Easement will be amended and recorded within 30 days of the Record of Decision to read:

"The Easement conveyed by this Article I shall terminate in the year 2120 or at such time as Maggie Creek flow augmentation required under the South Operations Area Project 1993 Environmental Impact Statement Mitigation Plan, if any, ceases, whichever is later; provided that in no event shall the term of this Easement extend beyond 2161."

# Soils, Vegetation, and Grazing

#### A. SUMMARY OF POTENTIAL IMPACTS

During the life of the mine, the Leeville Project would result in approximately 486 acres of surface disturbance, less 118 acres with implementation of Alternative C. The direct loss of approximately 264 acres of surface vegetation that is currently open to grazing (36 animal unit months) would occur during the life of the mine and until reclamation is

complete. After reclamation is complete approximately ½ acre of rock faces will be left unvegetated.

#### B. SUMMARY OF EXISTING RECLAMATION PLAN

Newmont's Reclamation Plan describes how the Leeville Project area will be reclaimed to achieve the post mining objectives of wildlife habitat, livestock grazing and recreational use. Closure and demolition of ancillary facilities and mine shafts, regrading of haul roads, the waste rock disposal facility, and ancillary facility areas, erosion and sediment control measures, topsoil and growth medium placement, amendments and fertilization, seeding and post-reclamation monitoring to ensure stabilization has been accomplished and revegation is successful are included. The costs to complete the reclamation activities are calculated and included in the plan. BLM and NDEP must both approve and agree on the proposed reclamation costs. Prior to initiation of work on the project, BLM and NDEP will finalize these reclamation costs and a bond will be posted.

A minimum of 24 inches of growth medium will be spread over the waste rock disposal facility (NDEP may require capillary barriers or impose other capping/closure requirements to meet their objectives of protecting waters of the State) and a minimum of 12 inches of growth medium will be used at all other mine facilities during reclamation. The growth medium cap covering the waste rock disposal facility will be sloped to promote run off of water, prevent ponding or impounding of water, and prevent erosion. (The reclamation plan states that the waste rock disposal facility will have final reclaimed slopes of 2.5H:1V)

At completion of mining, all but approximately 0.5 acres of rock faces would be reclaimed and revegetated.

# C. ENHANCED RECLAMATION

Where material besides soil is used to provide the 12 inches and 24 inches growth medium depths, all stockpiled topsoil will be applied as the final/top surface and amendments will be added as necessary.

Only the cliff areas in the vicinity of the production shaft and support facilities will be left unseeded. This represents approximately one half acre. One acre will be subtracted from the mule deer mitigation bank (as described in the Terrestrial Wildlife Section) to account for the permanent loss of habitat.

Newmont will conduct annual weed surveys and will develop a control plan to ensure that reclaimed areas will be protected from noxious weed invasion. This requirement will end at Bond release for vegetation.

# **Alternative B- Backfill Shafts**

The final closure plan for the Leeville Mine shall include sufficient engineering data regarding the backfilling of the production and ventilation shafts to ensure adequate permanent closure and to account for anticipated occurrences such as compaction and settling of the materials.







